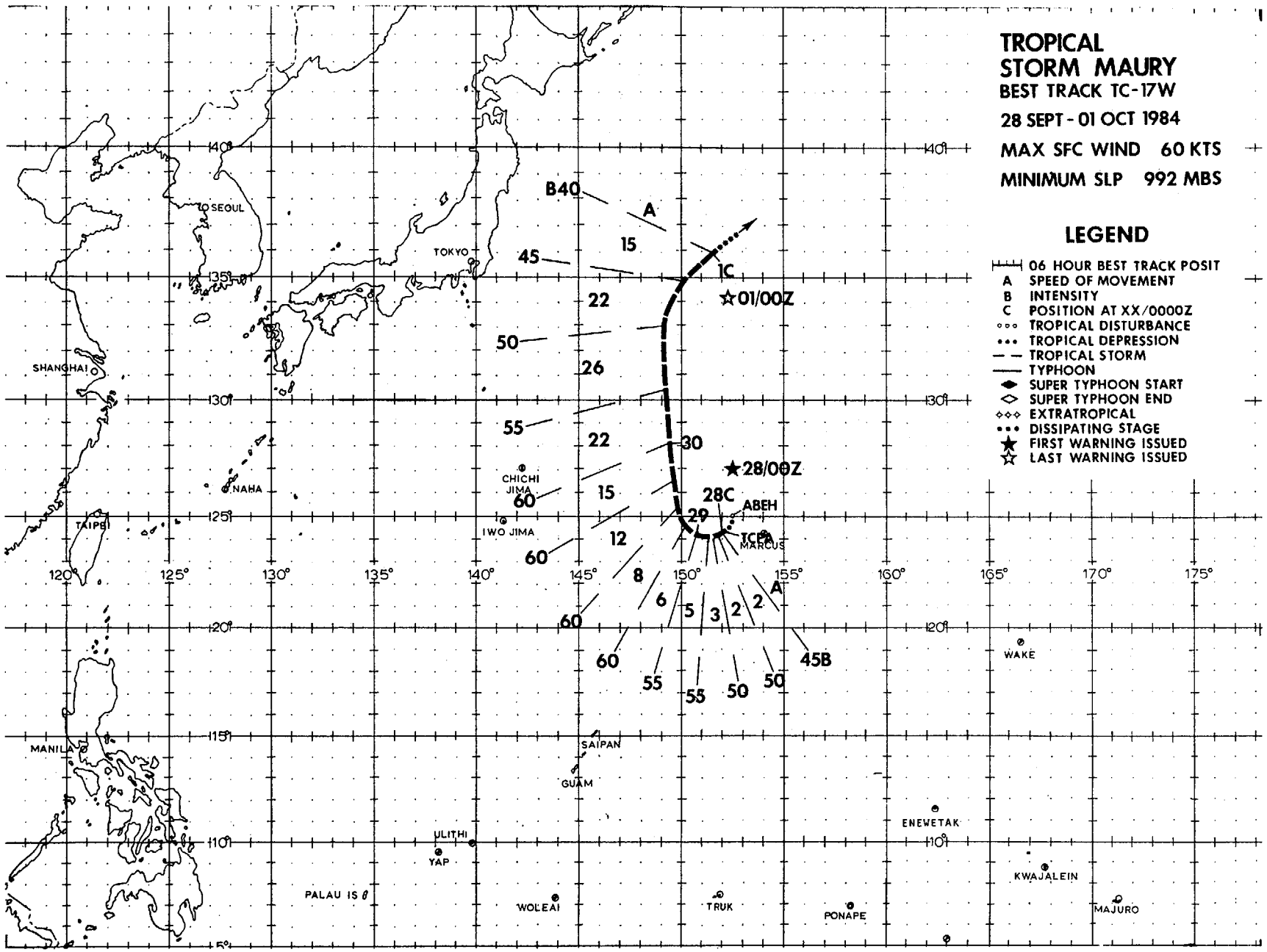
TROPICAL
STORM MAURY
BEST TRACK TC-17W
28 SEPT - 01 OCT 1984
MAX SFC WIND 60 KTS
MINIMUM SLP 992 MBS
LEGEND
06 HOUR BEST TRACK POSIT
A SPEED OF MOVEMENT
B INTENSITY
C POSITION AT XX/0000Z
TROPICAL DISTURBANCE
TROPICAL DEPRESSION
TROPICAL STORM
TYPHOON
SUPER TYPHOON START
SUPER TYPHOON END
EXTRATROPICAL
DISSIPATING STAGE
FIRST WARNING ISSUED
LAST WARNING ISSUED
B40
A
15
45
1C
☆01/00Z
22
50
26
55
22
30
★28/00Z
15
28C
ABEH
60
29
TCPA
12
60
8
6
5
3
2
2
A
60
60
55
55
50
50
45B
SEOUL
TOKYO
SHANGHAI
NAHA
TAIPEI
CHICHI JIMA
IWO JIMA
MARCUS
WAKE
MANILA
SAIPAN
GUAM
ULITHI
YAP
PALAU IS
WOLEAI
TRUK
PONAPE
ENEWETAK
KWAJALEIN
MAJURO
120°
125°
130°
135°
140°
145°
150°
155°
160°
165°
170°
175°
40°
35°
30°
25°
20°
15°
10°
5°

During a four week period extending from the last week of September until the middle of October, a large amplitude long wave trough persisted in the western North Pacific. This trough weakened the sub-tropical ridge and displaced it to the east of its climatological position. As a result, tropical cyclones developing in the western North Pacific would accelerate to the north and recurve almost as soon as they developed. Tropical Storm Maury was the first of five storms to develop in the western North Pacific during this period. As would be the case with the four storms after it, Maury failed to show any significant westward movement prior to accelerating to the north and recurving.

Tropical Storm Maury formed near Marcus Island (Minami Tori-Shima (WMO 47991)) at approximately the same time that Tropical Storm Nina was developing some 700 nm (1296 km) to the west-southwest. Nina's proximity would ultimately have a significant influence on Maury's future.

Maury was originally detected early on 27 September as an area of developing convection on the northeast extension of the monsoon trough. Initially the trough was linked to the trailing end of a mid-latitude front and this may have supplied some low-level vorticity which aided in the rapid development of the system.

The disturbance was first discussed on the 270600Z Significant Tropical Weather Advisory (ABEH PGTW) as one of several weak circulations embedded in the trough. During the next 10 hours it became evident that only two circulations would dominate. Consequently the ABEH was reissued at 271600Z to indicate this concern. These two circulations would soon develop into Maury and Nina respectively.

The disturbance continued to develop at a rapid pace; much faster than JTWC anticipated. Dvorak intensity analysis performed on the 271800Z imagery indicated that 25 kt (13 m/s) winds were present. The imagery over the area two hours later showed that a well-defined compact low-level circulation center had developed. Consequently, a TCFA was issued at 272300Z. At 272341Z, Dvorak analysis of Figure 3-17-1 indicated that 35 kt (18 m/s) winds were now present in this rapidly developing system. Based on the satellite intensity analysis, JTWC issued the first warning on Maury as a 35 kt (18 m/s) tropical storm at 280000Z. Synoptic data during this period was unable to shed any light on the true intensity of Maury.

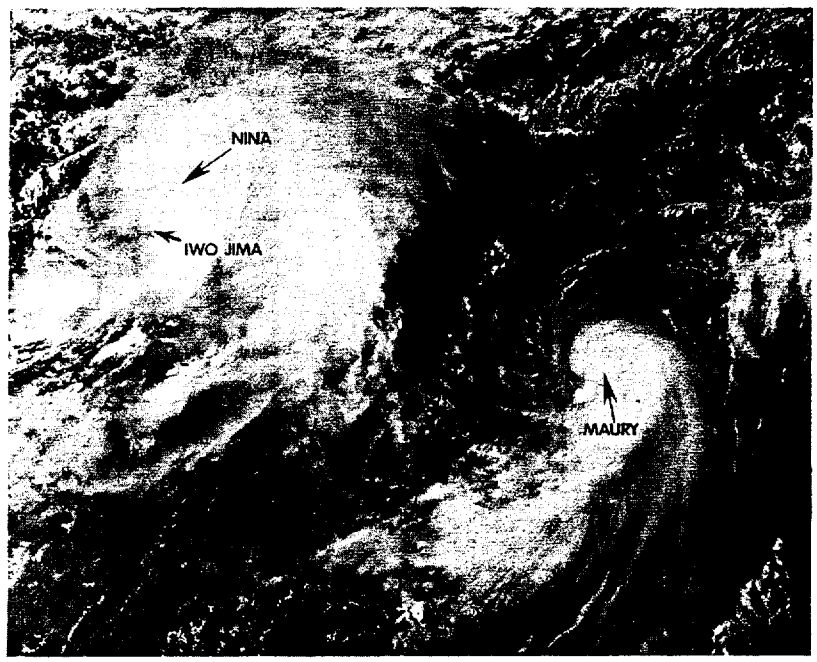

Figure 3-17-1. A compact Tropical Storm Maury just prior to issuance of the first warning. Dvorak intensity analysis of this imagery indicated that 35 kt (18 m/s) surface winds were present. This prompted JTWC to warn on this storm. The much larger Tropical Storm Nina is developing to the west (2723417 September DMSP visual imagery).

The first aircraft reconnaissance, conducted early on the 28th, quickly found the well-defined circulation center at 280303Z and reported that Maury was stronger than expected. Maximum surface winds of 50 kt (26 m/s) were found both southwest and northeast of the center. Consequently, the 280000Z warning was ammended to reflect these higher wind speeds.

During the next 30 hours, Maury moved slowly west, then northwest and further intensified reaching its peak intensity of 60 kt (31 m/s) at 290600Z. From now on the movement and intensity of Maury would be governed primarily by the much larger Tropical Storm Nina.

The upper-level anticyclone which was located just east of Nina exerted considerable pressure on Maury's convection from the start. The large anticyclone brought strong northerly upper-level winds over Maury which displaced the convection to the south. As a result, Maury's low - level circulation center was consistently located near the northwest edge of the convection (Figure 3-17-1). This strong wind shear prevented Maury from ever attaining typhoon strength.

In addition to affecting Maury's intensity, these strong winds aloft may also have been responsible for preventing Maury from turning to the north on 27 and 28 September. It is likely that the outflow from the anticyclone descended and generated a weak mid-level induced ridge north of Maury which temporarily prevented any significant movement of the storm until Nina had moved further north.

On 29 September, Nina began to move northeast and approach Maury. This brought Maury under the influence of Nina's large low-level inflow. As a result, the weak ridge eroded and Maury began to accelerate to the north. As Maury accelerated to the north, the strong upper-level winds continued to displace Maury's convection away from the low-level center. This caused Maury's low-level circulation to become exposed (Figure 3-17-2) and marked the start of the weakening trend. The subtropical ridge located to the east of Maury was also a factor contributing to the acceleration. With these two factors combined, Maury reached a top speed of 26 kt (48 km/hr) between 300600Z and 301200Z.

The presence of the subtropical ridge dominated the JTWC forecast philosophy from the start. Maury was forecast to move around the ridge and recurve to the northeast. The actual movement was fairly close to the predicted track, although forecasting the speed of movement and the latitude of recurvature was difficult due to the influence of Nina.

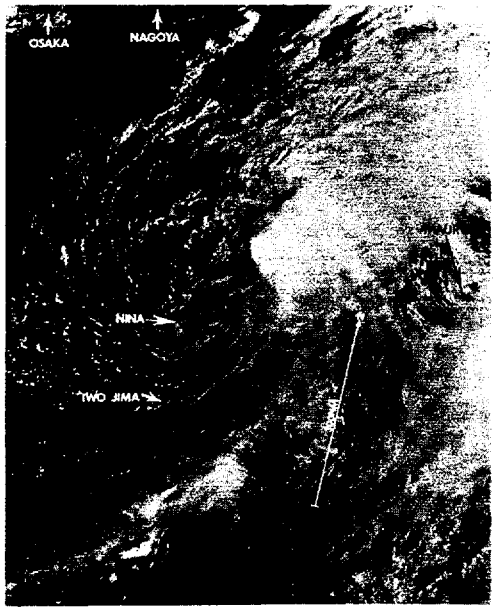

Figure 3-17-2. The exposed low-level circulation of Maury is now located just northwest of the main convection. Nina which by now had weakened to 30 kt (15 m/s), is located almost due west (300042Z September DMSP visual imagery).

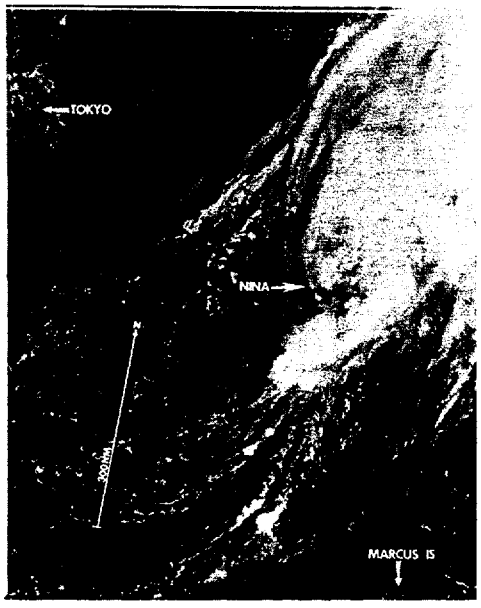

Figure 3-17-4. Imagery of Tropical Storm Nina just after the reconnaissance flight in Figure 3-17-3 was conducted. Maury is not locatable (010022Z October DMSP visual imagery).

At 301200Z, Maury was approximately 320 nm (593 km) northeast of Nina. Both storms were now moving to the northeast around the subtropical ridge. Instead of accelerating to the northeast like storms normally do, Maury slowed since it had entered Nina's larger circulation. With Nina moving to the northeast at 28 kt (52 km/hr) it took less than 12 hours to catch Maury and assimilate it into its circulation.

Maury was no longer identifiable on satellite imagery after 301831Z; however, aircraft reconnaissance several hours later was still able to locate both Maury and Nina (Figure 3-17-3). Satellite imagery at this time however, showed that only one storm, Nina, was present (Figure 3-17-4). At 010000Z, with Maury's continuation as a separate system highly unlikely, the final warning was issued.

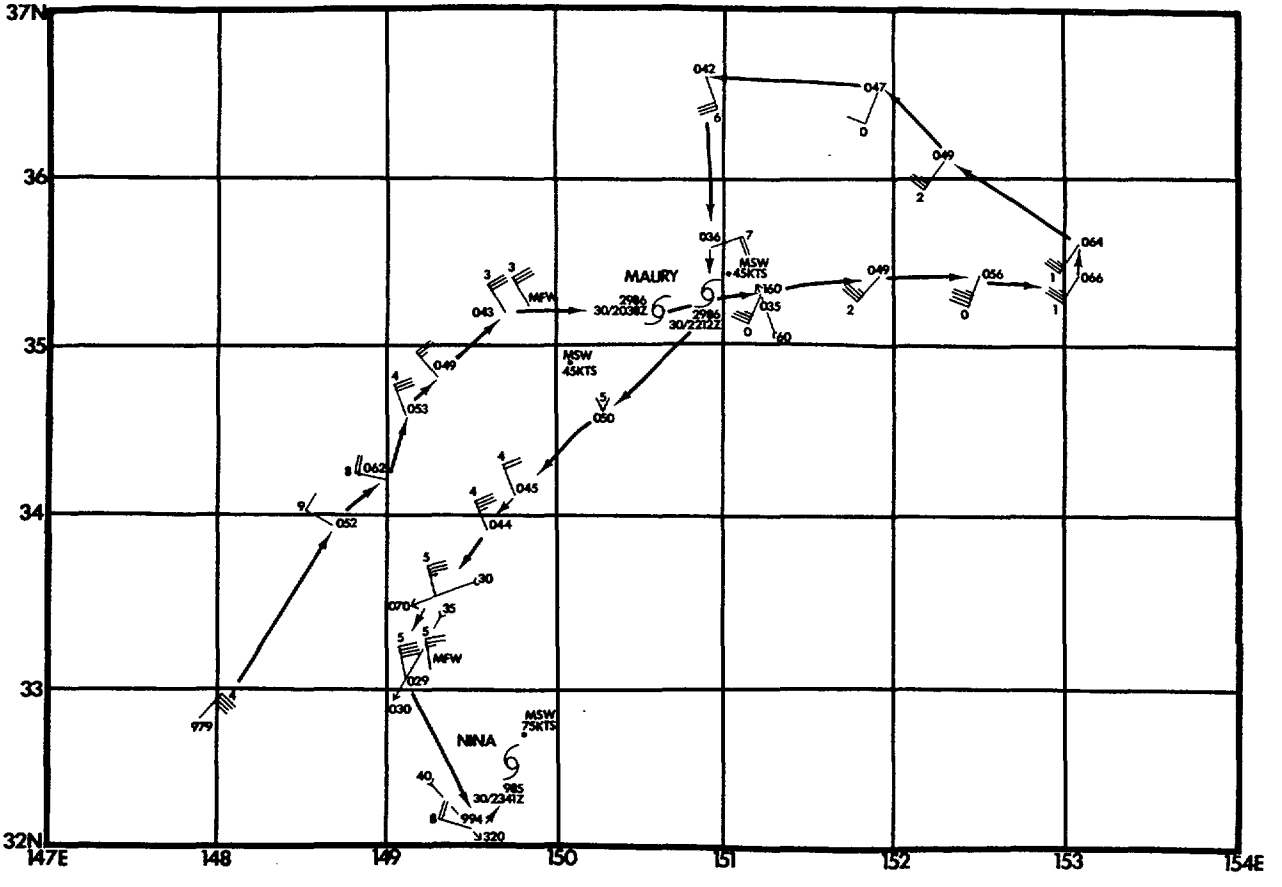

Figure 3-17-3. Although Tropical Storm Maury was no longer identifiable on satellite imagery, aircraft reconnaissance late on the 30th was still able to locate the storm's center. Wind and height data are from the 700 mb level. "MFW" represents the maximum observed flight level winds and "MSW" represents the maximum observed surface winds. The arrows with wind direction and speed represent the surface winds at that point. The number on the wind barb represents the tens digit of the 700 mb wind direction.